JPRS L/9776

8 June 1981

Japan Report

(FOUO 34/81)

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APPROVED FOR RELEASE: 2007/02/09: CIA-RDP82-00850R000400020015-9

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JAPAN REPORT

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CONTENTS

POLITICAL

SUZUKI MAY FIND IT HARD TO UP DEFENSE SPENDING

Tokyo THE DAILY YOMIURI in English 19 May 81 p 5

[Article by Yoshio Matsui]

[Text]

In the Japan-US summit President Reagan, as expected, strongly pressed Prime Minister Suzuki for Japanese efforts to build up defense, and Suzuki seems to have tacitly promised to do so.

Of course no definite figures to this end have been given. But the US is apparently confident that Japan will verify its promise by soon deciding upon concrete figures.

In fact, Secretary of State Alexander Haig has said that the US has no intention of pressing Japan in terms of the defense problem but that he believed Japan would voluntarily build up its defense capacity, apparently expecting much of the official-level conference based on the Japan-US security treaty scheduled for June in Hawaii.

US newspapers write almost with one voice that Japan will earnestly tackle the defense buildup task, giving favorable appreciation to Suzuki's visit to the US.

Just over one year has passed since the US came to urge Japan to increase its defense capacity. Japan managed to parry the strong US request the first time. But this year it will be difficult for Japan to behave itself in the same manner. As a result Japan will have to materialize its answer in the fiscal 1982 budget.

Prime Minister Suzuki, however, has promised not to increase taxes in the coming fiscal year. Moreover, financial rehabilitation is a task of prime importance for the Suzuki government.

The government plans to decrease the selling of government bonds by nearly ¥2,000 billion from the current fiscal year's ¥12,270 billion.

The Finance Ministry tentatively estimates the shortage of revenue for the next fiscal year at ¥2,700 billion. This situation will inevitably necessitate a decrease in expenditures.

The US is nevertheless urging Japan to increase defense capacity under such financial restraints.

After reading the Japan-US joint communique issued after the summit, Yoshio Sakurauchi, secretary-general of the ruling Liberal-Democratic Party (LDP), said the communique did not signify an instant increase in Japan's defense bill.

He explained that although the communique referred to Japan's spontaneous efforts to build up defense capability, this reference meant the defense

buildup program would be tackled in consideration of Japan's financial situation.

Is the problem so easy? Such an excuse that Japan would like to postpone the defense capability buildup because of the difficult state of finances will not be looked upon favorably by the US.

In fact, top officials of the Finance Ministry are embarrassed by this factor which is certain to increase defense spending.

Finance Minister Michio Watanabe is so sensitive to this problem that he said he would like to pay full consideration to this issue because defense is fundamental to the state.

But ranking officials of the ministry remain cautious, saying that preferential treatment of defense allocations will spark demands for similar consideration of welfare and education funding, depleting state coffers much as a small leak will sink even a big ship.

In Japan defense costs have been treated equally with welfare spending. Hence, there arises the question of whether it is possible to give defense costs special treatment.

The business community, which strongly insists on cuts in expenditures, is also somewhat embarrassed. But it appreciates that US demand, as Japanese industry supports increased defense measures.

Shigeo Nagano, president of the Japan Chamber of Commerce and Industry (Nissho), says that it is necessary for Japan to increase defense costs to some extent as there are few other countries whose defense expenditures go below one percent of the gross national product (GNP).

Tadashi Sasaki, chairman of the board of directors of the Japan Committee for Economic Development (Keizai Doyukai), shares the same opinion by saying that Japan should make defense efforts as much as possible.

But opposition parties stand against the joint communique.

Tamio Kawakami, director of the international affairs bureau of the Socialist Party (JSP), criticizes the communique by saying that an increase in Japan's defense capability threatens to make Japan involved in US world strategy, and that taking a turn toward becoming a military giant is dangerous.

Upon his return from the US, Premier Suzuki reported to the Diet and will now resume the task of compiling next fiscal year's budget.

Suzuki will find it difficult to treat the defense cost increase issue as he has repeatedly stated that he would not permit any favoritism or exception. In this sense the complication of the fiscal 1982 budget has run into an obstacle.

CSO: 4120

POLITICAL

MISERABLE SEQUEL TO SUMMIT

Tokyo THE DAILY YOMIURI in English 18 May 81 p 2

[BEHIND THE SCENES article by Minoru Hirano: "Miserable Sequel to Summit"]

[Text]

The disagreement between Prime Minister Suzuki and the Foreign Ministry over ways to explain the word "alliance" in the Japan-US joint communique developed into resignations of Foreign Minister Ito and Foreign Vice-Minister Masuo Takashima Saturday. Simultaneous resignations of the foreign minister and foreign vice-minister were unprecedented in postwar Japan.

What this incident revealed was that the word "alliance" which has a military overtone was too strong to the Japanese accustomed to peace for 36 years after the war and that both Suzuki and the Foreign Ministry had underestimated the danger of using the word in a joint communique.

The trouble originated when Suzuki told a press conference immediately after the Japan-US summit in Washington that the word "alliance" was without a military connotation. He gave this explanation in order to assure the nation that he had given no new military commitment to the US by using this word, but the explanation sounded unnatural and invited suspicion that he was withholding something.

On May 12, after Suzuki and his entourage returned to Japan, a top Foreign Ministry official gave a supplementary explanation that there was no alliance which did not involve national security and that the prime minister only meant to say that the military aspect did not constitute the core of the Japan-US alliance.

But a certain newspaper reported that this Foreign Ministry official had frankly criticized the prime minister by saying that an alliance which did not include military relations was nonsense. Most other newspapers also reported that the disagreement between the prime minister and the Foreign Ministry over ways to interpret the word had surfaced.

The fact was that the Foreign Ministry official did not criticize the prime minister in such a strong language.

Within the Liberal-Democratic Party, criticism arose that the prime minister's explanation sounded like an excuse, that he was paying too much deference to the public opinion and that he should speak out frankly.

Because Suzuki at the Washington press conference gave an "insufficient" explanation, as he acknowledged later, he found himself labeled a timid and incompetent leader of Japan.

Suzuki, however, would lose face if he reversed his previous remarks after being criticized. He must show off his authority over the Foreign Ministry. Accordingly, at a cabinet meeting Friday, he criticized the Foreign Ministry for the way the text of the joint communique was written by Foreign Ministry officials. He said: "The core of a joint communique must be the summit itself and a joint communique which does not contain what was discussed at the summit is not good. The way to prepare a joint communique should be changed"

However, the joint communique issued this time had been executed and released with the prior approval of the prime minister himself. It was unreasonable for him to find fault with the joint communique after its issuance. It was reported that Ito had been prompted to resign by his resentment at this remark by the prime minister. Japan loses its international trust if a prime minister finds fault with a joint communique issued on the basis of accord with the head of state of the other country. We can infer that Ito by resigning tried to lodge a protest with the prime

minister who does not understand such fundamentals of diplomacy.

As a result, public sympathy goes to Ito and Takashima and public criticism centers on Suzuki who lacks ability to lead, the diplomatic common sense and wisdom to size up the international situation.

This incident is an unhappy affair for Japanese diplomacy. The Foreign Ministry at the outset of this year said that policy adjustment with the Reagan administration was the most important diplomatic task for Japan in 1981. And no sooner than the Japan-US summit between Suzuki and the new president realized than did the discord within the Japanese Government over ways to explain a word in the joint communique lead to the resignations of the two top officials of the Foreign Ministry. Then, all the efforts by the Foreign Ministry to pave the way for the Japan-US summit have gone to naught.

The word "alliance" was used in the joint communique at strong urging of the US. The US in excessive zeal to urge Japan to upgrade its defense capability victimized the two top men in the Japanese Foreign Ministry. The US should be more cautious in making requests with Japan hereafter.

CSO: 4120

POLITICAL

NAKASONE'S PERIPHERY BECOMING ANIMATED

Tokyo MAINICHI DAILY NEWS in English 13 May 81 p 2

[Article by Takehiko Takahashi]

[Text]

The periphery of Director General Yasuhiro Nakasone of the Administrative Management Agency has suddenly become animated of late.

Nakasone has been elected to the Diet 14 times, the same number as Prime Minister Zenko Suzuki. Differing from Suzuki, Nakasone has had long experience as the boss of a faction. Because of this, he has been regarded as the most promising candidate for the premiership.

Nevertheless, the political environment surrounding Nakasone has not necessarily been favorable. One reason is that he is from the same electoral district as former Prime Minister Takeo Fukuda. Nakasone's former boss, Ichiro Kono, was anti-Eisaku Sato (former prime minister; now deceased) and this greatly affected Nakasone's political activities.

When Zenko Suzuki became the prime minister after the sudden death of former Prime Minister Masayoshi Ohira, this was not resisted by Nakasone. Rather than to say that he did not resist, it might be more correct to point out that he could not resist. This was because the leaders of the Liberal-Democratic Party's biggest factions, the Tanaka and Fukuda factions, supported Suzuki.

Enters Cabinet

Nakasone entered the cabinet at Prime Minister Suzuki's request. Although Nakasone had hoped for the finance minister's post, a balance with Toshio Komoto (present director general of the Economic Planning Agency) had to be considered and Prime Minister Suzuki asked Nakasone to join the cabinet as director general of the Administrative Management Agency. Nakasone did so with the understanding that his status would correspond to that of "deputy prime minister." He is now busily engaged in promoting administrative reform.

Although Prime Minister Suzuki has not formally appointed Nakasone as "deputy prime minister," he has been virtually according Nakasone that status. When Suzuki visited the ASEAN countries, Nakasone became "acting prime minister." This again

took place during Suzuki's recent visit to the United States. When Prime Minister Suzuki goes to Western Europe and also when he attends the summit meeting, Nakasone will probably again be the "acting prime minister" as heretofore.

As these cases accumulate, Nakasone is likely to widen the gap with Director General Komoto of the Economic Planning Agency who has been considered as a promising candidate for the premiership up to now.

In order for Nakasone to assume the reins of administration, he will require the cooperation of the Tanaka faction, the largest and at the same time most active faction of the LDP. If the Tanaka faction backs Nakasone in the party presidential election next year, the Suzuki administration will face a crisis.

There is a group in the Tanaka faction that has a feeling of goodwill toward Nakasone. The foremost member of this group is Shin Kanemaru, former director general of the Defense Agency. One reason for this is said to be that Eiichi Nakao of the Nakasone faction and Kanemaru are from the same electoral district (Yamanashi Prefecture).

Kanemaru and Nakasone met in Tokyo on the night of May 7. They talked amicably and shook hands three times. Kanemaru said that he would act in accordance with the decision of the Tanaka faction and if support for Nakasone is decided, then he (Kanemaru) will gladly abide by that decision. Nakasone expressed his thanks for Kanemaru's statement.

On the same night of May 7, a ceremony to establish the "Naiyukai," consisting of Diet members who formerly served in the former Home Ministry, was held. Although there have been several prime ministers who formerly served in the Finance Ministry, such as Hayato Ikeda, Takeo Fukuda and Masayoshi Ohira, there has been none from the Ministry of Home Affairs. It is perhaps only natural as elite bureaucrats that they would like to see a prime minister emerge from the ranks of the Home Affairs Ministry.

Naiyukai Member

Although it was for a short time, Nakasone served in the Home Affairs Ministry and is thus a member of the Naiyukai. Moreover, among the Naiyukai members, the one standing the closest to the premiership at the present time is none other than Nakasone.

Under such circumstances, the establishment of the Naiyukai means for Nakasone the emergence of a very favorable condition in aiming for the premiership.

Nakasone changed his residence on May 5. He has rented the house that had been occupied by Shigeo Nagashima, former manager of the Giants (pro baseball team.) In the past, Nakasone's house had no place for newspapermen to park their cars when they converged there to interview him. Moreover, according to a fortune teller, the former house was not "lucky" and if Nakasone stayed in that house, he would be "unable to climb to the top."

After Nakasone moved to his new residence on May 5, it seems as if the sun had suddenly started to shine on Nakasone's periphery.

But how all this will be linked with the premiership will undoubtedly depend entirely on the ability of Nakasone himself.

(The writer is an adviser to the Mainichi Newspapers and former chief editorial writer).

CSO: 4120

SCIENCE AND TECHNOLOGY

VARIOUS INDUSTRIAL FIELDS ADVANCE INTO ROBOT AREA

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 pp 1,4

[Text]

The industrial robot manufacturing industry lately has leaped into the spotlight as a highly promising business and has been drawing a welter of new entrants from diverse fields.

While the pioneers in this sector, such as Kawasaki Heavy Industries, Ltd., are consolidating and expanding their production structures, those newly barging into it are not only such big companies as Matsushita Electric Industrial Co. and Sumitomo Heavy Industries, Ltd. but "odd sorts," such as Sailor Pen Co. and furniture makers.

In other words, the "rush" is on and market competition is steadily intensifying.

This is because robots having functions nearing that of human beings, high efficiency and yet being low priced, successively are being developed and practicalized, and this has been leading more and more manufacturers to use them.

Already, about 75,000 robots now are being used in Japan, slightly over 70 per cent of the world's market. With growing domestic demand as a lever, the large builders of robots are starting to grapple fully with the problem of exporting them to the U.S. and Europe.

There are possibilities thus of Japan becoming a base of supplying industrial robots to the world in the future.

Production of industrial robots in Japan in entire last year reached a value of about ¥60 billion. Demand for some time is expected to grow at an annual rate of around 50 per cent. Opinion is strengthening that in 1990, this market is going to expand to a scale of ¥600 billion.

Owing to such prospects, builders of industrial robots, from last year to this year, have been pressed with boosting their production capacity.

Kawasaki HI, the biggest builder of industrial robots, in fiscal 1981 plans to increase its robot production by 30 per cent over that of the preceding fiscal year to slightly over 600 units.

Next biggest builder is Yaskawa Electric Mfg. Co. which eyes doubling its output to around 600 units. Chasing these Big 2 are Hitachi, Ltd., Mitsubishi Heavy Industries, Ltd., Kobe Steel, Ltd. and Fujitsu Fanuc, Ltd.

All of the industrial robots made by these firms are high efficiency versions employing mini-computers for their control. However, production of robots operated simply by manual means also is growing.

Meantime, newcomers are advancing into this field from numerous other sectors—elec-

tric-electronic machinery, general machinery, stationery equipment and furniture fields.

In the period from last year-end to this year, Matsushita Electric Industrial Co. and Mitsubishi Electric Corp. have started marketing welding robots. Nippon Electric Co. lately has developed an ultra-precision robot and intends to commercialize it within the next year or two.

Sumitomo Heavy Industries has revived its robot division which had been dormant and is intending seriously to grapple with turning out robots.

Okamura Mfg. Co., a large furniture maker, has started actively to solicit orders for a robot which it originally designed for its own use.

It is estimated there already are now about 130 companies, old or new and large or small, competing in the robot manufacturing field.

Demand for industrial robots have begun to zoom since the younger workers tend to shy away from work that dirties the hand or which constitute a simple repetition. The companies seeking them thus want to transfer such work from human beings to robots.

The welding field now is said to lack 30,000 welders, and the situation reportedly is similar for the press and painting fields.

Robots can work steadily for 24 hours without any complaints as to bad environment.

The increase in robot demand has come about also from the sharp elevation in their efficiency lately from use of mini-computers and the big come-down of their prices.

A welding robot which in the past had a price tag of ¥12-13 million now has come down to around ¥8 million. With personnel costs going up, nothing is cheaper than using a robot for welding. It is said that if a small and medium enterprise uses a robot in place of a welder, it can pay back the robot price in less than two years.

Use of robots thus has been spreading fast from welding, painting, inspection and other jobs. The industries which are actively using robots chiefly are the auto, electric-electronic machinery, precision machinery and steel industries.

This means that robots are beginning to take over industries which had supported Japan's international competitiveness with their "high quality work-force."

It appears certain the time will come when blue color workers will disappear from Japan's factories and the "steel collar" — robots — will become the principals.

CSO: 4120

SCIENCE AND TECHNOLOGY

RIGHT SECURED TO EXPLORE NIGERIAN URANIUM

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 p 6

[Article by Isao Saotome]

[Text]

PARIS — The Government of Niger will likely award uranium mining rights to the Power Reactor and Nuclear Fuel Development Corp. (PNC) of Japan for uranium exploration in its national reserve south of Akouta and Arlit. U.S. and French companies have been trying to obtain the rights to continue their exploration activities.

The Niger plan in favor of PNC is intended to avoid the excessive presence of the U.S. and France in the country's uranium hunt efforts. It is also believed that Niger will use the concession to strengthen the general economic ties between Niger and Japan.

Niger is believed to possess about the richest uranium reserves of all producing countries. In 1980, the two existing fields — Akouta and Arlit — produced 3,300 tons of uranium, equivalent to a volume good for running 10 1-million-kilowatt plants for one year. Japanese engineers of both the Overseas Uranium Resources Development Co. and International Resources are exploring the country's uranium resources, with OURD already involved in production in Akouta.

If realized, the mining rights will allow PNC to explore for the atomic fuel in a 5,400-square-kilometer area south of Akouta. The two parties will work out the details, with PNC likely to put up the costs for activities from exploration to production. The produced uranium will be split between Niger and PNC.

As a PNC source commented in France, the award of the rights has yet to be finalized. He added that the reserve looks promising even though attempts will have to be made to determine possible uranium deposits. PNC and Niger will discuss the "content" of an exploration pact.

CSO: 4120

SCIENCE AND TECHNOLOGY

MORE COMPANIES ENTER WORD PROCESSOR MARKET

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 p 9

[Text]

Competition is intensifying in the Japanese word processor market as new entries are conspicous.

Nine makers now are in the market. They are six computer builders (Toshiba Corp., Nippon Electric Co., Fujitsu Ltd., Oki Electric Industry Co., Hitachi, Ltd. and Mitsubishi Electric Corp.), two office equipment makers (Sharp Corp. and Canon, Inc.) and a communications equipment maker (Matsushita Communication Industrial Co.). And, Ricoh Co., a Tokyo office equipment maker, is going to enter the market as the 10th supplier.

Demand for Japanese word processors has been rising as they are regarded an efficient means for the so-called "office automation" in the future.

However, the problem is that unlike the English language which features only the alphabet in writing, the Japanese language has 51 kana syllabaries and thousands of kanji (Chinese characters). Because of this complexity, these producers employ different input methods, including the kanji tablet method, the interactive kana-kanji conversion method and the two-stroke mnemonic code input method.

The best selling models thus are expected to determine the input method in the future. This is stimulating makers to vie for larger shares while the market is still young.

CSO: 4120

SCIENCE AND TECHNOLOGY

PERSONAL COMPUTER MAKERS STEP UP EXPORTS TO EUROPE

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 p 9

[Text]

Japanese personal computer makers have been stepping up exports of their products to major European countries. Some of them are now eyeing the U.S., a still uncultivated market for Japanese personal computer builders.

As the quality of Japanese-made products is highly rated in Europe and the U.S., exports to these industrialized nations are expected to gain momentum in the near future.

In the European market, in particular, local makers and importers of American models already have been getting nervous over the steadily rising market share of Japanese-made personal computers.

Sharp Corp. seems the most aggressive toward exports among Japanese makers. The Osaka company plans to boost shipments of its MZ-80 Series personal computers to Europe to more than 25,000 units in the current 1981 business year from about 15,000 units in the preceding year, ended March 31. Sharp markets them mainly in France and West Germany through its office equipment marketing agents. "Japanese makers now deprive U.S. suppliers of their European customers," said a Sharp spokesman.

Sord Computer System Inc., a Tokyo personal computer builder-distributor which recently set up an assembly plant in Ireland, plans to market 3,600 units in Europe this year.

Logic Systems International Inc. of Tokyo also is working out a new strategy to boost exports. The company now delivers more than 350 units a month to the European market.

These Japanese makers now are paying close attention to the U.S., the world's largest computer market.

Sharp started shipments of PC-3000 Series personal computers to the U.S. in late February in the hope of marketing more than 5,000 units this year.

Nippon Electric Co. (NEC) plans to start exporting personal computers to the U.S. during fiscal 1981. NEC is now consolidating its marketing networks in the U.S. for the planned sales of personal computers.

CSO: 4120

SCIENCE AND TECHNOLOGY

NEC GETS MOST ORDERS FOR DIGITAL EXCHANGE SYSTEMS

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 p 9

[Text]

Nippon Electric Co. (NEC) recently scored the world's highest volume in bookings of international orders for digital electronic telephone switch systems.

According to the top Tokyo telecommunication equipment maker, its recent receipt of a Malaysian order for such a system for 1,670,000 circuits brought to 3,260,000 the total of circuits for all such systems internationally ordered from NEC since it started selling such systems outside Japan in October, 1977.

This meant NEC reportedly has surpassed in such volume Sweden's Telefonaktiebolaget L.M. Ericsson, hitherto boasting the world's largest order volume of 2,200,000 circuits.

The digital electronic telephone switch devices are the mainstay of today's highly sophisticated computerized data communication and ordinary telecommunication systems.

The first digital electronic telephone switching system to be sold in the world was that of Northern Telecom Ltd. of the U.S. This took place in the U.S. market in 1976. It has been picked up by various independent American telephone companies.

NEC started a drive to sell its own NEAX61 series in the U.S. in October of the following year. Since landing the first American order for the series from Continental Telephone Corp. in May, 1979, NEC has listed a succession of follow-up orders from other independent U.S. telephone utility firms.

In addition, NEC has also won orders for its own systems from 13 other countries — Brazil, Argentina, New Zealand, Colombia, Syria, Sri Lanka, Iraq, Puerto Rico, Trinidad and Tobago, India, Brunei, Egypt, and, this time, Malaysia.

In producing such systems, semiconductors are said to be so expensive as to account for about half the cost of each set. Besides, the key to the technological refinement of such systems is said to lie in the capacity to make good LSI circuits. Having attained the world's second highest place in that capacity, NEC is believed to be decidedly more competitive in such international system sales than Northern Telecom, L.M. Ericsson, or CIT and Thomson-CSF, both of France, now its principal rivals.

NEC President Tadahiro Sekimoto believes that NEC has secured the world's top leadership in such system sales with little fear of losing it in the foreseeable future.

Japan's own market for such systems is expected to start growing soon because Nippon Telegraph & Telephone Public Corp. is to introduce such systems into its expanding digital data communication service. NEC is thus getting ready to capture the leadership of the domestic market as well.

CSO: 4120

SCIENCE AND TECHNOLOGY

PRACTICAL POWER PLANT RELYING ON SEA WAVE DRAFTED

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 p 15

[Text]

Hitachi Shipbuilding & Engineering Co. has drafted a blueprint of what will be a practical sea wave-energy electric power plant.

Harnessing the sea's energy potentials, including wave and tide-flow forces and temperature difference between shallow and deep waters, has long been studied in Japan.

But, according to the Osaka company, its prospective coastal wave-force power plant, if realized, would be the first of its kind in Japan to be applied to practical electric power generating purposes.

The top-rate shipbuilding and machine engineering company completed the blueprint with the cooperation of the Muroran University of Technology in Hokkaido.

Basic sea wave force data were gathered at a Japan Sea coastal town of Hokkaido, known as one of the world's roughest wave-hit sea shores.

The data were closely analyzed and reproduced in experimental tanks to find out what kind of generator would be the best to run at a uniform pace between the rough and calm weathers, especially between winter and summer.

Estimating an average of only about 15 per cent of all rounds of wave force to be available as the electricity-generating energy, the company has rated its proposed moderate-size plant's generating capacity at 28 kilowatts at the most and 20 at the normal level.

The plant will feature a 3-meter-high, 4-meter wide swinging blade-shaped steel board pushing out like a fighting shield into the waters from a breakwater or an embankment.

Oncoming and retreating waves swing the plate, and the movements are transmitted through cylinders and oil-filled hydraulic pipings to a turbine and generator built into the breakwater or embankment.

The company has started looking for a proper place to build the first demonstration model of the plant.

Considering the rather small capacity and geographical location of its proposed plant, the company envisions it as a power source for powering lighthouses, melting snow on waterfronts, and heating fish farm water.

Such a power plant may be still five times as costly as the conventional oil-fueled equivalent, but the company sees a long-range development potential of the unlimited wave energy.

CSO: 4120

SCIENCE AND TECHNOLOGY

ENGINE PROJECT WITH UNITED KINGDOM TO REMAIN 'FLEXIBLE'

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 954, 12 May 81 p 5

[Text]

A joint project between three Japanese companies and Rolls-Royce Ltd. of Britain to develop a new jet engine for medium civilian transport planes is being modified by the Japanese side for economy of development cost, it was recently learned.

The Japanese — Ishikawajima-Harima Heavy Industries Co., Kawasaki Heavy Industries, Ltd., and Mitsubishi Heavy Industries, Ltd. — preferred an engine for a 130-seater plane and Rolls-Royce for a 150-seater when they tentatively came to an agreement on the joint RJ500 series engine development project at the end of 1979.

Eventually, a compromise was reached that the high pressure-involving section of the engine, chiefly to be produced by the Rolls-Royce side, be designed to match the 150-seater class plane demands, but the Japanese side also develop an applied lighter-duty version of the engine to meet the 130-seater class transport engine demands. The ultimate product will be of a versatile capacity to meet demands concerning both classes of aircraft.

But as a practical matter, Japanese experts concerned with the XJB project are visualizing two models of such engine — an RJ500-25 and an RJ500-35—, respectively with thrusts of about 9.5 and 11.3 tons.

The Japanese side had wanted the lighter-duty engine because they had envisioned sales of such engine for new 130-seater class civilian aircraft series expected to be developed by many aircraft makers, including the Boeing Co., during the first half of this decade.

But some Japanese observers have figured that during the second half, only 1,000 units of such new transports will be sold, but thrice as many units of larger 150-seater class ones will be in demand. However, the Japanese side has had to prevent expansion of its cost burden of ¥70 billion (half to be government-subsidized) by avoiding two parallel development jobs.

CSO: 4120

SCIENCE AND TECHNOLOGY

INSTITUTE ASSUMES JOB OF HOLDING MICROORGANISMS

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 954, 12 May 81 p 9

[Text]

The Government's Fermentation Research Institute at Tsukuba started working, as of May 1, as one of the world's three depositories of living microorganism specimens to be involved in applications for international patents on all biotechnologies, including pharmaceutical ones concerning new kinds of antibiotics.

The national institute has been internationally chosen by the patent authorities of all advanced nations to be the world's third prestigious depository after the first two in the U.S. for keeping such microorganisms alive and intact for long periods under the so-called Budapest Treaty of 1977. The international patent treaty to simplify and unify hitherto nationally-divided and troublesome patent-seeking procedures took effect last summer.

Every depository so named and trusted is obligated to keep every microorganism specimen placed in its care alive and well zoo-style for at least 30 years if the application concerned goes through and draws patent on the idea or process represented by the application. In case of an unsuccessful application, the deposit is returned.

Last autumn, the institute created a special center for reception of all requests for preservation of such specimens, whether foreign or domestic.

Domestically, it had already been such a depository of long standing, now keeping about 6,000 stocks of microorganisms in its care under Japan's own patent law and system. Having now become an international organ, its specimen preservation facilities are naturally expected to become short of space and equipment.

A quick expansion is now being arranged for, especially because all sorts of revolutionary biotechnology for producing wonder drugs, foodstuffs, new fuel sources and industrial materials have become a worldwide scientific-industrial boom.

The Budapest Treaty has done away with the past irksome requirement when seeking patents in more than one country on any new idea or process concerning microorganisms to deposit a specimen concerned with the patent authorities of each country. Under the new treaty, it will be sufficient to deposit such a specimen in any one of the international depositories.

CSO: 4120

SCIENCE AND TECHNOLOGY

RICOH MAKES PLIANT TYPE LIQUID CRYSTAL DISPLAY

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 954, 12 May 81 p 9

[Text]

Ricoh Watch Co. of Nagoya recently announced the creation of a polyester film version of the conventional glass panel capsule of electronic liquid crystal display devices, promising numerous advantages over the glass panel type.

According to the timepiece-producing subsidiary of Ricoh Co. of Tokyo, Japan's top-rate business machine and camera maker, its new plastic product promises, above all, bendability and crack or shatter-proof tensility against shocks, two things impossible to expect from the glass cases.

Now widely applied to electronic watches, calculators and other indicating devices, liquid crystals change their molecular structure momentarily and in different degrees through twisting caused by electric current and thus work as an indicating instrument when enclosed in a flat glass capsule with electric terminals.

In addition to its two unique advantages, the new plastic encasing ensures a great reduction in the weight and thickness and a more than 70 per cent lowering of the production cost compared with its glass counterpart.

The company has recently introduced its new technological achievement at a New York congress of the Society for Information Displays.

According to the company, its "PF-LCD" (polyester film — liquid crystal display) capsule has been developed through its technological innovations, including 1) formation of a thin transparent electroconductive layer on polyester filming by vacuum vapor deposition of a tin oxide-indium (an oxide alloy), 2) creation of a special chemical to keep the molecular arrangement (structure) in liquid crystals in a given fixed direction and 3) attaining complete uniformity in the thickness of the space wherein a given liquid crystal is enclosed.

The company envisions, that its PF-LCD capsule, compared with the glass type, could promise thinning of standard-size electronic watch or portable calculator display panels from between 1.4 and 2 millimeters to only 0.55 mm, lightening the weight by more than 90 per cent and lowering the production cost by 75-83 per cent.

Even the thinnest existing watch could be made still 30 to 40 per cent thinner and bendable according to the curve of the wrist. Unbreakable automobile dashboard indicators could also be produced.

Japan, now producing more than 100 million LCD indicators per year, commands an 80 per cent-plus share of the world's markets for such indicators.

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SCIENCE AND TECHNOLOGY

MITI PLANS FIRM FOR YX PLANE SALE

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 pp 1,4

[Text]

The Ministry of International Trade & Industry intends to have three major plane fuselage makers form the core of a new company for undertaking mass production-sales of Japan's up-and-coming civil airliner, dubbed the YX.

The key makers are Mitsubishi Heavy Industries, Ltd., Kawasaki Heavy Industries, Ltd. and Fuji Heavy Industries.

MITI has revealed hope of seeing such a new company shape up by the autumn of 1982.

It is part of the Ministry's policy for consolidating and strengthening the development, production and sales setup for the plane.

In other words, the new firm will be for handling the production-sales phase.

Along with this, the private non-profit association — Civil Transport Development Corp. —, which had spearheaded developing the YX, will devote itself to development of a "New YX" (civil airliner succeeding the YX).

At the same time, Nihon Aeroplane Manufacturing Co., which had undertaken production and sales of the YS11, Japan's first postwar turbojet medium passenger airliner, will be abolished in fiscal 1982.

The reasons for MITI moving out to adjust and bolster Japan's aircraft industry are:

—The tri-nation project among Japan, the U.S. and Italy to develop the YX plane (200-seat class Boeing 767) has passed the stage of development and making a prototype, and now is due to advance to mass production from the fall of 1982.

—Full-scale development of the "New YX" of 150-seat class is set to start also from fiscal 1982.

—The mission of Nihon Aeroplane Manufacturing has come to an end.

In other words, MITI feels that such plane building has reached a new phase, and the aircraft industry has to be fostered as a typical future industry for the nation in considering the high technology needed for it and its ripple effects on other industries.

As to adjusting the aircraft industry's structure, feeling is strong within the Government and the aircraft business that for raising Japan's aircraft industry to the level of those in the U.S. and Europe, there is urgency to set up a machinery for mutually promoting cooperation among those concerned and harmonizing their plans, rather than taking measures for individual firms.

The plan to form a new company stems from such thinking, and the aircraft industry reportedly is virtually in agreement with MITI's aim.

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SCIENCE AND TECHNOLOGY

FOKKER-DOUGLAS GROUP ASKS TO JOIN AIRCRAFT DEVELOPMENT PLAN

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 8

[Text]

Board Chairman F. Swarttouw of the Netherlands' Fokker B.V. has asked Japan to join the plan of his company and America's McDonnell Douglas Corp. to develop, produce and sell a new 150-seat aircraft, MDF-100, under equal partnership, government sources here revealed last Tuesday.

Swarttouw made the request to the Ministry of International Trade & Industry and Japanese aircraft makers during his stay in Tokyo on May 8 and 9. He flew to Tokyo only several days after his company's announcement that it would form a joint venture company with McDonnell Douglas to develop the MDF-100.

While calling for Japan's participation as an equal partner, Swarttouw showed readiness to have Japan develop and manufacture important parts of the MDF-100. He also expressed the hope to equip the plane with the jet engine RJ500 to be developed jointly by Japan and Britain's Rolls-Royce, Ltd.

The Fokker head's approach coincides with Japan's international scheme to develop a next generation civilian transport plane, called the new YX, having 150 seats, which will be put into service in the middle of the 1980s. The new YX is a follow-up to the YX plane (Boeing 767) now being developed jointly by Japan, the U.S. and Italy.

Fokker, which repeatedly had requested Japan to develop the new YX with Boeing Corp. on a troika basis, suddenly gave up this idea in favor of teaming up with McDonnell Douglas in early May.

In briefing the Japanese side on the latest tie with McDonnell Douglas, Swarttouw strongly wanted Japan to join the Fokker-Douglas plan. He said the project will start at the end of this year or early next year.

Japan will thus have to select partners for its new YX scheme from among Boeing, the Fokker-Douglas group, and Airbus Industrie S.A., a consortium of four European enterprises.

Both MITI and the industry appears inclined to collaborate with Boeing as of the present. Their only apprehension about this case is that Boeing will certainly have the initiative. Conversely, equal partnership in the Fokker-Douglas venture, as stressed by Swarttouw, may prove an attraction for the Japanese side.

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SCIENCE AND TECHNOLOGY

PLASTIC INJECTION MOLDER MAKERS IN TECHNOLOGICAL DEVELOPMENT RACE

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 8

[Text]

A fierce technological development race has started among plastic injection molding machine makers here to develop new types of molders in anticipation of rapid growth of the video disc and digital audio disc fields.

A video disc injection molder has already been commercialized by Meiki Co., and two of them recently were delivered to Pioneer Electronic Corp. More orders are likely because Pioneer Electronic is planning to double its monthly video disc production capacity to 200,000 units before the year-end.

As for digital audio disc injection molders, Nissei Plastic Industrial Co. and Toshiba Machine Co. disclosed recently they were technologically certain now to develop inspection molders for making digital audio discs of pulse code modulation type.

The digital audio disc acoustic manufacturers are likely to start sample production of PCM digital audio discs before this year-end and attain mass manufacture next year. Thus, joint efforts to develop injection molders are expected to spread.

Pioneer Electronic last year established its own system to mass-produce an optical home type of video disc, and Sony Corp. is preparing to start similar mass manufacture.

Such discs have to be made from some acrylic resin at micron level of precision. No conventional phonographic record-making press machine can do such a job.

New kinds of injection molders for such precision plastic are thus wanted.

Demands for such molders to make digital audio discs of PCM type are likely to be even greater than those for video discs because all Japanese record-producing acoustic makers are trying to develop their own PCM digital audio discs. The injection molder makers' race is thus likely to keep growing hotter.

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SCIENCE AND TECHNOLOGY

NISSHO PLANS TO COMMERCIALIZE BIOMASS STUDIES IN 5 YEARS

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 17

[Text]

Nissho Iwai Corp. of Osaka recently disclosed that it has launched a full-scale drive to survey all sorts of promising studies, both at home and abroad, concerning development of biomass.

According to the corporation (known as Nissho-Iwai Co. until recently), the idea is to develop a new business line by commercializing every new promising biomass study, initially in three presently important areas of such research. They are: 1) production of the fermentation type of alcohol, such as through fermenting waste sugar refining molasses or some kind of starch, 2) production of the cellulose separation type of alcohol through chemical separation of cellulose in pasture grass or other plants and 3) production of a plant type of oil (possibly a substitute for petroleum) in the form of a vegetable wax, so far considered a substitute for whale oil, from a certain Australian species of plant.

Concerning the fermentation type of alcohol, the corporation has already started a feasibility survey in the U.S. to build a first factory. As for the Australian plant oil, the corporation has received a joint development proposal from an Australian enterprise and is planning to commercialize a prospective production method in Japanese territory. It is now having the method developed in Japan.

The company expects full commercialization of such biomass utilization studies in the next five years. As soon as any such method is developed to the commercializable point, the company plans to start its production investments, acquisition of patent rights, and developing markets concerned.

The new drive of the company launched with a special project promotion team with many kinds of experts means the company will join the already growing competition earlier started among other Japanese trading companies.

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SCIENCE AND TECHNOLOGY

NEW PIGMENTS FOUND TO POSSESS HIGH CAPACITY LONG WAVE ABSORPTION

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 17

[Text]

Two new kinds of organic pigment of the merocyanine group of dyestuff materials created by the governmental Research Institute for Polymers and Textiles relative to development of a good solar cell material have proved to increase 30 times in sunlight absorbency when processed with alkali.

According to the institute, which comes under the Agency of Industrial Science & Technology, its research is part of a current brisk worldwide series of studies to produce a new kind of solar battery or hydrogen generator by utilizing the capacities of some kinds of organic pigments to turn light into electricity. The institute had already succeeded in developing a hydrogen generator of the kind by creating electrodes out of some type of merocyanine group pigments.

The sunbeam consists mostly of longer wavelength lights, and the new kinds of organic pigment the institute has developed absorb these longer wavelength lights.

Coming in a thin filming form, the two varieties of organic pigment, each of a long chain alkyl base type with 18 carbon molecules, are originally put in an acid solution and tested with a xenon lamp standing for the sunlight.

In that case, they chiefly absorb shorter wavelength lights.

But when the solution is steadily switched to a neutral and then a series of thicker alkaline solutions, they pick up an increasingly stronger capacity to absorb longer wavelength lights.

Untimately, they come to acquire, in terms of the density of electric current they produce by absorbing such lights, a capacity to generate 2 microamperes per ' square centimeter, 30 times their original condition in an acid solution.

The presumed reason is the formation of a certain pigment molecule association, a neat combination of several such molecules, here and there in an alkaline condition.

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SCIENCE AND TECHNOLOGY

SINGLE MODE FIBER OPTICS COMMUNICATIONS

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 17

[Text]

Nippon Telegraph & Telephone Public Corp. (NTT) may become the first in the world to practicalize both the multiple mode and single mode types of fiber optics communication system.

According to NTT, it plans to start its public communication service early next year, and by 1987 or 1988 respectively with the two types of optical fiber communication.

The multiple mode type, already well developed in technological, if not practical, terms features many different ways or patterns of each light flash passage through a slender fiber line.

Each flash hits the inner wall of the line and is reflected to the opposite wall. All light flashes thus runs through the line by the aid of the repeated reflections. The smaller the diameter of the line, the less will be the number of modes until about 10 microns across when there will be only a single mode.

The single mode type is far more preferable because it is four to 12 times as large in information carrying capacity as the multiple mode type and much smaller in the loss of light energy during the light passage.

In the case of a 1.3-micron long wave band laser light-transmitting line, it will need a midway light booster only once every 20 kilometers, compared with 15 for the multiple mode types and 1.5 for the wire and cable lines. The single mode type will be especially valuable in massive communications between big cities.

But development of a good single mode type had long been difficult due to such technological problems as how to ensure a long service life of the light source (a laser diode), produce such fine fiber lines, and connect such fibers or such fibers and the laser.

NTT obviously has solved all such problems as indicated by its recent attainment of a stage to start shortly a full-scale series of field testing with its experimentally-completed single mode fiber communication system. As for the multiple mode fiber type of such system, NTT is already getting ready to open its regular public communication service early next year, with two information-hauling capacities -- 32 million bits (480 circuits in telephone terms) a second and 100 million bits (1,440 circuits) a second.

The 80-kilometer long field testing line between western Tokyo and a neighboring prefecture, part of which has already been built and put to trial, will be tested until 1984, and a year or two of commercialization tests will follow.

NTT has been receiving many Western calls for its technological cooperation. British Minister of Industry Kenneth Baker, when in Tokyo recently, proposed a joint Japan-British research concerned to NTT.

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SCIENCE AND TECHNOLOGY

LOCAL GOVERNMENTS STRIVING TO FOSTER HIGH TECHNOLOGY INDUSTRIES

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 17

[Text]

Many prefectural and municipal administrations and their industrial experiment stations are trying to redevelop their local industries by introducing advanced — or high-technology — industries.

Their common reasoning is:

—Such industries, notably including Japan's growing electro-mechanical industries, are environmentally healthy, non-polluting types, and moreover, capable of absorbing much surplus labor force.

—They also promise wide-ranging good side-effects of levelling up the general local industrial technologies.

—They are credited with a high potential to develop into tomorrow's mainstay industries of Japan to supersede the steel, automobile, and other existing leaders.

The administration of Kawasaki City, adjoining Tokyo, is a typical instance of the new regional industrial drives.

Kawasaki authorities say, "Continued activation of the local economy over a long range will be impossible without inviting some high-technology (pioneering) industries and bringing them together with the already established local industries into a new combined spearhead of the regional economic growth."

The authorities of the prefecture of Osaka, wherein industries are concentrated in and around the City of Osaka, believed the local industries which are 'overly inclined to the production of intermediate industrial materials will have to be reformed to bring a redevelopment of the whole regional economy by "building new urban types of industry throughout our prefecture."

Electro-mechanical drive

Kawasaki City is preparing to invite large-scale advances of microprocessor and related manufacturing enterprises. This will be part of the city's ambitious plan to develop into an "electro-mechanical industrial metropolis," popularly known as a "microcomputer city." From before the start, on last April 1, of fiscal 1981, its administration has been studying all sorts of possible effects of such invitation on the existing local industries in a tie-up with the Japan Microcomputer Industry Association.

Locationing, proper scale deciding, and other problems of the prospective invited enterprises are to be answered, and an official program is to be established during the year for starting the invitations immediately.

Similar moves have been launched since April 1 by the prefectural administrations of

Osaka, Yamaguchi, Aichi, Hiroshima and Shizuoka.

The Osaka prefectural administration will check with all such industries now existing in Japan as to their intentions to answer its prospective invitations. At the same time, it will spend about a year finding proper locations in the southern part of the prefecture and determining the suitable types of industry to enter the region.

The prefectural administrations of Yamaguchi, Aichi and Hiroshima have likewise started surveys on possibilities of inviting electronic enterprises into Ube and Onoda cities and their environs; all sorts of high-technology industry into the whole prefecture; and electronic and related enterprises into the whole prefecture.

Hiroshima authorities have organized a special council of scholars, intellecturals and industrial representatives.

The prefectural authorities of Shizuoka last November created a research panel on invitation of 16 kinds of such industry, including microprocessor and biochemical, and the possible effects of such invitation on the present local industries, including woodworking, furniture and textile.

Experiment stations

The prefectural industrial experiment stations of Ishikawa and Hiroshima have started their own research and investigation projects on local introduction of electro-mechanical industries and application of such technology to traditional local industries.

The Ishikawa prefectural station is organizing an electromechanical research panel with local industrial experts and engineering scholars of Kanazawa University on the applicabilities of electronics to the local machine, handicraft and fermented soya bean paste industries.

The Hiroshima prefectural station (at Kure) is also to study such applicability of electronics to local industries.

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SINGLE CRYSTALS OF METAL CARBIDE NEWLY PRODUCED

Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 17

[Text]

A method of producing high-quality single crystals of metal carbides has been conceived by a governmental institute.

The National Institute for Researches in Inorganic Materials of the Science and Technology Agency said it has succeeded in producing single crystals of uniform good qualities.

It considered this an important stepping stone to developing efficient electron beam discharging devices.

The institute will now proceed to production of monocrystals of tungsten and other metal element carbides, most promising for attaining its research aim to develop such devices.

Producing metallic element carbide monocrystals of good qualities had been considered very difficult not just because of the necessity of high temperatures of well over 3,000 degrees C. but because of the disuniformity in the ratio of metallic elements and carbide contents in the final product.

The disuniformity results from partial evaporation of either metallic elements or carbon when a given baked mass of metal carbide is melted under a high temperature caused by high frequency electric waves by a widely known "floating zone" process to obtain the final single crystals.

The institute's reserch team led by Yoshio Ishizawa, coordinating researcher, has improved the process into the institute's own process to attain the long-missed uniformity.

The secret is to insert either metallic element or carbon powders in between two rods of metal carbide to work during the heating process to supplement the loss of the metallic element or carbon. The rods are rotated and slowly pulled out, at a rate of only 1 centimeter an hour, to get the final monocrystals in bar form, as conventionally practiced.

The heating temperature thus can be lowered by about 500 degrees C. than hitherto required to obtain the three kinds of metal carbides as referred to above in wanted content ratios.

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SCIENCE AND TECHNOLOGY

BRIEFS

NUCLEAR SPENT FUEL PLANT--The Japanese and U.S. Governments have agreed that the Power Reactor and Nuclear Fuel Development Corp. should be allowed to operate its nuclear spent fuel plant for another six months. Under the previous agreement, the Japanese Government's nuclear corporation was to run its plant, rated at 0.7 ton daily, until June 1. The latest agreement encouraged the Tokyo Government to try to have the U.S. remove the current system, in which the plant's operating periods are set by the two Governments. Also, the Government of Prime Minister Suzuki will persuade the Reagan Administration to approve the Japanese plan for building a second spent fuel reprocessing plant besides the experimental plant at Tokai village. President Reagan shows more flexible stand about the U.S. nuclear policy. Japan's current reprocessing operation is bound by the 1977 bilateral agreement. As for the second plant, the nuclear industry intends to set its annual capacity at 6,000 tons, with the fully commercial plant scheduled to be completed by 1990. In exchange for the U.S. approvals, the Washington Government may seek Japanese investment in a nuclear fuel enrichment plant and imports of U.S. reactors. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 954, 12 May 81 p 4]

REVAMPING ALUMINUM INDUSTRY--The Aluminum Industry Council of the Industrial Structure Council, an advisory organ to the International Trade & Industry Minister, has begun to reconsider measures to revamp the domestic aluminum smelting industry which has been on the verge of collapse again since last summer's second oil crisis. The council, first of all, is reconsidering the changes in the environment surrounding Japan's aluminum smelting industry, the aluminum smelting industry's role in the national economy, the proper production scale of the industry, and the industry's structural revamping measures. Among the structural revamping measures being considered by the council are reduction in aluminum smelting capacity, energy cost curtailment, measures for stable transactions of domestic aluminum ingots, promotion of joint aluminum smelting ventures abroad, and technical innovations. According to the council's recommendation in the fall of 1978, the nation's annual aluminum smelting capacity was reduced to 1,110,000 tons by the end of March, 1979 from the previous 1,640,000 tons. The council this time is being compelled to reconsider again the reduced capacity since the second oil crisis has further broadened the price gap between domestic and foreign aluminum ingots. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 954, 12 May 81 p 4]

MASS-MARKET OF MEMORY CHIPS--Oki Electric Industry Co is aiming at taking the initiative in marketing 64-kilobit dynamic random access memory (RAM) chips. The Tokyo company recently bared a plan to produce 64K dynamic RAMs at a monthly rate of 300,000 from August at its subsidiary Miyazaki Oki Electric Co in Kiyotake, Miyazaki Pref. The monthly output volume is double that of Fujitsu Limited and far larger than the 50,000-100,000 chips for Nippon Electric Co (NEC) and Hitachi, Ltd. and the planned 100,000 chips (from July) for Mitsubishi Electric Corp. Furthermore, Oki is planning to start marketing them at less than ¥3,000 per chip, about ¥1,000 lower than the current average price, from October. On the strength of mass production and mass marketing at low prices, Oki hopes to take the leadership in the marketing race of the strategic electronics in the future. Against the backdrop of Oki's bold program is its recent achievement in elevating the production yield of 64K RAMs from the present 5 per cent or so to more than 10 per cent, according to Executive Managing Director Yoshio Masuda. Oki will actively export the chips to the U.S. The company already has set up a marketing subsidiary, Oki Semiconductor Inc., in Santa Clara, Calif. to facilitate the marketing of 64K RAMs in the world's largest semiconductor market. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 954, 12 May 81 p 7]

C. ITOH SEMICONDUCTOR LINE--Trader C. Itoh & Co. has made a full entry into the promising semiconductor manufacturing equipment market. The nation's third largest trading company has become the sole agent of Optimetrix Corp. of Mountain View, Calif. and started importing fully automated direct wafer stepper project systems. C. Itoh hopes to market integrated semiconductor manufacturing systems in the future by gradually increasing the number of items it will handle. According to the importer, Optimetrix stepper projection systems have a resolution capability never before achieved in projection masking. Lines and spaces to 1.5 microns can be obtained with the Optimetrix 8001, it said. Orders for several units already have been received, C. Itoh said. A system costs ¥220 million. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 954, 12 May 81 p 7]

GREATER COMPUTER EXPORTS--Nippon Electric Co (NEC) hopes to raise the ratio of exports to its total computer sales from the present 6 per cent to 20 per cent in five years. In order to achieve the target, NEC will expand computer exports by 60-80 per cent yearly in the coming five years. In the latest 1980 business term ended March 31, the company sold about ¥15 billion worth computers abroad, accounting for only 6 per cent of its total computer sales. As far as exports are concerned, NEC lags far behind its rival computer builders--Fujitsu Limited and Hitachi, Ltd. Communications equipment and semiconductors occupy a far larger portion of NEC's exports than computers. As a first step, NEC plans to start shipments of a new series of office computers to the U.S., Australia and Southeast Asia in the second half of the current 1981 business year. It hopes to deliver a total of 5,000 units in three years. Half of the 5,000-unit target will be sold in the U.S. NEC Information Systems Inc of Lexington, Mass, will market the new series of office computers with application programs specially designed for American users. In Southeast Asia, NEC Singapore Pte. Ltd. and NEC Malaysia Sdn. Bhd. will promote marketing. In Australia, NEC Information Systems Australia Ltd started operation in April to facilitate computer sales there. The company also plans sales in Argentina. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 9]

SOVIET STEEL INSPECTION MISSION--The State Committee of U.S.S.R. Council of Ministers for Science and Technology has notified the Japan Association for Trade with Soviet Union & Socialist Countries of Europe of its willingness to dispatch an investigatory mission to the Japanese steel industry. The Japan Iron & Steel Federation will shortly accept the Soviet request. The technical exchange between the Soviet Union and Japan is based on the scientific and technical cooperation agreement signed between the Soviet State Committee and the Japan Association. The Soviet committee has so far dispatched missions to Japan's shipbuilding, chemical, industrial robot, automobile, and electronics industries. While the Soviet Union is the world's largest steel producer, its steel output has been sluggish in recent years. But steel demand in the Soviet Union and its satellite countries is rising fast, as represented by the Yamburg natural gas pipeline construction which will use a large mount of large-diameter steel pipes. The committee's steel mission is expected to inspect Japanese steel plants with the principal aim of improving steelmaking facilities in the Soviet Union. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 955, 19 May 81 p 6]

OPTICAL LONG WAVELENGTH SYSTEM--An optical fiber communication system of 1.3 microns in light wavelength in the longwave range of such systems to promise a much greater communicable distance than any conventional equivalent system in the medium-wave range has been commercially developed by Sumitomo Electric Industries, Ltd of Osaka. The first model has been delivered to the Research Institute of Atmospherics of Nagoya University. The new system comprises optical fiber "cables" (lines) made of a quartz material. Such quartz-group materials have been well known as the best transmitters of light pulse signals in fiber optics communication. But production of really good types of fiber lines, light emitters and receivers, had been technologically difficult until the company's solution of the technological problems involved. The company envisions that its new achievement will bring a decided expansion in the applicability of the optical fiber communication systems so far developed in Japan because the long-wavelength type of such a system attains a communicable distance 3.5 times the conventional medium-wavelength types. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 p 15]

CARBON FIBER CONCRETE--Sumitomo Metal Industries, Ltd. and Kajima Corp. jointly have developed what is said to be the world's first carbon fiber reinforced concrete (CFRC) that is strong in bending. Compared with ordinary concrete, the new concrete is about 30 times stronger and can be produced in any desired shape. It is made by mixing cement mortar with low modulus carbon fiber (LMCF) up to 1 to 5 per cent. LMCF measures 10-25 microns in diameter and 3-30 millimeters long. Its elongation rate is 50-60-fold that of ordinary concrete, according to Sumitomo. Although the new concrete costs 5-10 times more in terms of unit price, less concrete is used, meaning that the cost is not so high. Kajima plans to commercialize CFRC around this fall. The company intends to use it as a new material in civil engineering fields. [Text] [Tokyo JAPAN ECONOMIC JOURNAL in English Vol 19, No 952 28 Apr 81 p 16]

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